

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE BEFORE THE
BOARD OF PATENT APPEALS AND INTERFERENCES

In re the Application of:

Klosowski et al.

Serial Number: 09/410,162

Filed: September 30, 1999

Title: CONSERVATION OF ORGANIC
AND INORGANIC MATERIALS

Attorney Docket: DC4810



) Group Art Unit: 1762

) Examiner: Cameron, E.

) Appeal Brief Under
37 CFR 1.192

) Date: June 5, 2001

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Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

This is an appeal from the Final Rejection dated November 13, 2000, which rejected Claims 51, 54, and 55 of the above referenced application.

REAL PARTY IN INTEREST

The real party in interest in this Appeal is the Assignee of the instant application, Dow Corning Corporation.

RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences known to Appellants which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

STATUS OF THE CLAIMS

Claims 51-71 were originally filed in this application. Claims 52, 53, and 56-71 were subject to a restriction requirement and were withdrawn from consideration under 37 CFR 1.142(b) by the Examiner as being drawn to a non-elected species. Claims 51, 54, and 55 are pending in the instant application and were finally rejected in the office action dated November 13, 2000. Claims 51, 54, and 55 are now the subject of this appeal.

STATUS OF AMENDMENTS

No amendments have been submitted for consideration subsequent to the Final Rejection dated November 13, 2000. The appealed Claims 51, 54, and 55 are in Appendix A of this brief.

SUMMARY OF THE INVENTION

This invention relates to a method of preserving organic and inorganic materials, the method comprising: impregnating a material selected from organic materials or inorganic materials with a hydrolyzable silane or a mixture of hydrolyzable silanes and thereafter, curing the product of (I).

ISSUE 1

The first issue in this appeal is whether Claims 51, 54, and 55 are obvious and therefore unpatentable under 35 U.S.C. § 103(a) over Pinchuk (U.S. Patent No. 5,736,251).

ISSUE 2

The second issue in this appeal is whether Claims 51, 54, and 55 are obvious and therefore unpatentable under 35 U.S.C. § 103(a) over Leidheiser et al.

GROUPING OF THE CLAIMS

Claim 51 of the instant application is an independent claim. Claims 54 and 55 of the instant application are dependent on Claim 51. The claims may be grouped together for the purposes of this appeal.

ARGUMENTS

ISSUE 1

The first issue in this appeal is whether Claims 51, 54, and 55 are obvious and therefore unpatentable under 35 U.S.C. § 103(a) over Pinchuk (U.S. Patent No. 5,736,251). The Examiner states that the '251 patent teaches forming a coating on an elastomeric article (organic) with a silane such as methyltriacetoxysilane (5:64) that is cured into a homopolymer or copolymer (6:6-19). The Examiner further states that the '251 patent fails to teach that the coating preserves the substrate, but that such an effect would be inherent to the silanes used. The Examiner further states that the art does not recognize any distinction between coating and impregnating (In re Marra 141 USPQ 221).

The Examiner correctly states that the '251 patent teaches forming a **coating** on an elastomeric article. Furthermore, the patentee of the '251 patent teaches that their invention relates to surface treatments and coatings intended to make **the surfaces of objects more lubricious**. More particularly, it relates to a new and improved highly crosslinked silane treatment effective to **reduce the coefficient of friction of a surface** by at least about 50% and as much as 80% or more compared to the coefficient of friction of the same untreated **surface** (1:10-16). The patentee of the '251 patent further discloses that the new and improved silane surface modification and/or coating composition may be applied onto a surface to be treated by any suitable application means, including applying in the form of a solution or dispersion, for example, by **spraying, dipping, brushing, rolling** and the like or, without the need for solvents, by a vapor phase deposition method (3:17-24). The patentee of the '251 patent further discloses that generally, **the item to be coated is immersed in a coating solution for a period of about 2 to about 10 minutes and is then removed from the solution and immediately placed in an oven for curing** (7:57-60).

In contrast, the instant invention relates to **a method of preserving organic and inorganic materials**, the method comprising: **impregnating** a material selected from organic materials or inorganic materials with a hydrolyzable silane or a mixture of hydrolyzable silanes and thereafter, curing the product of (I). Nowhere in the disclosure of the '251 patent do the patentees suggest or contemplate impregnating the articles of their invention. In fact they teach away from impregnation by teaching that the coatings are intended to affect only the surface of the article.

In the art of the preservation of materials, there is clearly an art-recognized distinction between coating and impregnating. Many specimens like any animal or human specimen will stay preserved for tens or maybe hundreds of years if all the cells are reacted. That means all the cells on the surface **and** in the interior. With material that is subject to oxidation or bacterial growth, if this total impregnation is not conducted, within days or weeks decay or purification will set it. It is extremely obvious to the eyes and nose when this occurs.

In addition to the oxidation there is the need to preserve cell size and shape if the specimen will look as desired. Thus most of the time the internal cells also have to be filled so they will not collapse. This was observed in preserving corn cobs brought up after several hundred years under water. If the internal cells were not totally filled with the preserving medium there would be shrinkage of the specimen. Even some of the more rigid specimens like wood and leather and even old glass need to be totally penetrated and impregnated with the curing material so that the cell structure doesn't collapse. If not totally filled and reacted the inventors found shrinkage in the wood and leather. With glass that had the soluble silicates dissolved out of it in the sea, if not impregnated the structure would shrink on itself and break into pieces out of the water.

Thus the preservation techniques described in this invention refer to total impregnation and reaction in the cells. This includes the cells in as well as those on the surface. This is totally different than a coating which only deals with what is on the surface. With a coating, we get only surface treatment and that would not be acceptable in preservation of any specimens.

Further, a coating needs only to be on the surface and thus a variety of materials can be used. However for cell penetration some portion of the reactive materials used have to be able to penetrate the cells and thus materials like polymers cannot be large polymers or materials like those common to most coatings.

One can use the analogy of a cake. You can put sugar into the cake mixture and when done the entire cake would be sweet, including the surface. One would not conclude that the surface of the cake has a sugar coating but that the entire cake is sweet. One could make a cake with no sugar and put a sugar frosting on later. Here only the outside would be sweet. You would not conclude that either the two cakes or the two surfaces are identical. In fact they are very different. Thus the process of impregnation is totally different than a coating. A coating

simply would not be sufficient to preserve materials.

Furthermore, as stated above, the patentee of the '251 patent further discloses that generally, the item to be coated is immersed in a coating solution for a period of about 2 to about 10 minutes and is then removed from the solution and immediately placed in an oven for curing (7:57-60). Immersing a specimen in a solution for 2 to 10 minutes would clearly be insufficient to preserve the material and this is recognized in the art as stated above and Applicants believe this clearly teaches away from the instant invention.

Further in support of the difference between coating and impregnation, the Board is referred to the English language definition of these two terms. The Board is referred to *The American Heritage College Dictionary, Third Edition*, at page 267, the term "Coating" is defined as "A layer of a substance spread over a surface for protection or decoration; a covering layer" and at page 683 "Impregnate" is defined as "3 To fill throughout; saturate" or "4 To permeate or imbue", "saturated or filled". Thus it is clear that the English Language clearly contemplates a difference in meaning between the two terms.

In addition, the Examiner cites *In re Marra* 141 USPQ 221. Appellants believe that case is distinguishable from the present invention. The invention in *In re Marra* related to a method of coating paper with an aqueous composition and the art also dealt with methods of coating paper. In that case the Court stated:

"We have difficulty accepting the distinction urged by appellants that "coating" differs from "impregnating" in this case. It would appear that a porous material like paper would be impregnated to some extent by an aqueous composition applied "by various coating techniques" as Keim et al. suggests, whether the composition is called "coating" or "impregnating." It seems doubtful that a clearly defined interface between the paper and the coating would result. The differences between coating compositions and impregnating compositions, according to appellants, [***9] are in dilution and viscosity. That is, a "coating composition usually has a high-solids content and a relatively high viscosity." It is clear that none of the claims have any limitations on dilution (solids content) or viscosity. The method claim merely recites "applying" the composition which would appear to include both "coating" processes and "impregnating" processes, even if there is a distinction between "coating" and "impregnating," and there is no evidence that the art recognizes a distinction. Accordingly, [**973] we see no justification for concluding that it is unobvious to employ a sizing agent in either a "coating" composition or an "impregnating" composition.

The Claims in the In re Marra case merely recited “applying” in contrast to the instant claims which clearly recite “impregnating”. Of more importance however, is the difference between the arts involved. The invention and the references cited in In re Marra both related to methods of coating paper. In contrast, the instant invention relates to a method of preserving organic or inorganic materials and the ‘251 patent cited by the Examiner in this case relates to surface treatments and coatings intended to make the surfaces of objects more lubricious. Therefore based on the above, Appellants believe that the In re Marra case cited by the Examiner is clearly distinguishable from the case at hand.

It appears that hindsight reasoning has been employed in rejecting the claims, and such reasoning is not a proper test of obviousness under Section 103. The advantages disclosed by the instant invention are totally unexpected and are not disclosed by the ‘251 patent. Therefore the references relied upon by the Examiner are inadequate to establish a prima facie case of obviousness.

ISSUE 2

The second issue in this appeal is whether Claims 51, 54, and 55 are obvious and therefore unpatentable under 35 U.S.C. § 103(a) over Leidheiser et al. The Examiner states that Leidheiser et al. teaches the protection of an inorganic material such as steel panels with polymerized methyltriacetoxysilane. The Examiner also states that Leidheiser et al. fails to teach that the coating preserves the substrate, but argues that protection against corrosion is a type of preservation. The Examiner further states that the art does not recognize any distinction between coating and impregnating (In re Marra 141 USPQ 221).

The Appellants arguments with regard to Issue 1 above relating to the Examiner rejection of Claims 51, 54, and 55 over the ‘251 patent are incorporated herein by reference. Leidheiser discloses that steel panels were coated with ten different silanes by **brushing** the silane or a diluted silane on the surface, and then the coated panels were evaluated for corrosion protection. Nowhere in Leidheiser et al. do the authors suggest or contemplate impregnating their steel panels. Nowhere in Leidheiser et al. do the authors supply any motivation to one skilled in the art of preservation of materials to impregnate their steel panels with silanes in order to preserve them. Brushing of the silanes onto organic or inorganic materials would not in fact preserve them and therefore Appellants believe that Leidheiser et al. teaches away from the instant invention.

As discussed above, in the art of the preservation of materials, there is clearly an art-recognized distinction between coating and impregnating.

In addition, as discussed above, it is clear that the English Language clearly contemplates a difference in meaning between the terms "coating" and "impregnating".

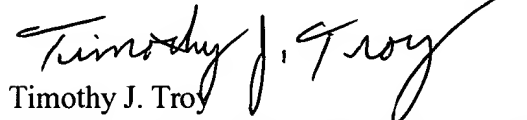
Furthermore, as argued above, Appellants believe that the In re Marra case cited by the Examiner is distinguishable from the instant case. The invention in In re Marra related to a method of coating paper with an aqueous composition and the art also dealt with methods of coating paper. The Claims in the In re Marra case merely recited "applying" in contrast to the instant claims which clearly recite "impregnating". Of more importance however, is the difference between the arts involved. The invention and the references cited in In re Marra both related to methods of coating paper. In contrast, the instant invention relates to a method of preserving organic or inorganic materials and Leidheiser et al. cited by the Examiner in this case relates to coating steel panels with different silanes by **brushing** the silane or a diluted silane on the surface, and then evaluating the coated panels for corrosion protection. Therefore based on the above, Appellants believe that the In re Marra case cited by the Examiner is clearly distinguishable from the case at hand.

It appears that hindsight reasoning has been employed in rejecting the claims, and such reasoning is not a proper test of obviousness under Section 103. The advantages disclosed by the instant invention are totally unexpected and are not disclosed by Leidheiser et al. Therefore the references relied upon by the Examiner are inadequate to establish a prima facie case of obviousness.

Based on the above remarks the appellant respectfully requests that the Examiner's rejection of Claims 51, 54, and 55 of the instant invention be reversed and that the claims be allowed.

Respectfully Submitted,

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APPENDIX A

51. A method of preserving organic and inorganic materials, the method comprising:

- I. impregnating a material selected from
 - a. organic materials or
 - b. inorganic materials

with a hydrolyzable silane or a mixture of hydrolyzable silanes and thereafter, curing the product of (I).

54. A method as claimed in Claim 51 wherein the hydrolyzable silane is an acetoxysilane.

55. A method as claimed in Claim 54 wherein the acetoxysilane is methyltriacetoxysilane.